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BACKGROUND INFORMATION

Application No.:	095-00042
Plant ID No.:	R13-3214A
Applicant:	Triad Hunter, LLC
Facility Name:	Stewart Winland
Location:	Pleasant Ridge Road, Tyler County
NAICS Code:	211111
Application Type:	Class II Administrative Update
Received Date:	December 12, 2016
Engineer Assigned:	Jonathan Carney
Fee Amount:	\$300.00
Date Received:	December 13, 2016
Complete Date:	January 9, 2017
Due Date:	March 3, 2017
Applicant Ad Date:	December 14, 2016
Newspaper:	Tyler Star News
UTM's:	Easting: 505.10505 Northing: 4373.28351 Zone: 17
Description:	Remove the existing vapor recovery unit (VRU) and have condensate tank/truck loading emissions controlled solely by the enclosed combustors currently serving as backup to the VRU.

DESCRIPTION OF PROCESS

The following description of changes was taken from the permit application R13-3214A:

Gas produced by the wells passes through heated Gas Processing Units (GPUs) where Produced Fluids (water and condensate) are separated from the raw gas stream and further separated into Produced Water and Condensate. The gas is compressed, dehydrated and injected into pipelines for transportation to facilities owned by others for further processing. A small portion of the dehydrated gas is used as fuel to power facility equipment.

The separated condensate is processed through a condensate flash separator where the pressure is reduced to slightly above one atmosphere, thereby allowing dissolved gases to flash out of the raw condensate. Flash gas from the condensate flash separators routed to the Flash Gas compressor where the pressure of the gas is sufficiently increased to allow injection into the primary gas management system as described above. The stabilized condensate is accumulated

in five 500 bbl aboveground storage tanks prior to transportation, via tank truck, to a condensate processing facility owned and operated by others.

Produced water is routed to a separate series of five 500 bbl aboveground storage tanks prior to transportation, via tank truck, to a suitable disposal facility.

Vapors emitted by the stabilized condensate storage tanks, produced water tanks, and the associated truck loading operations for both fluids is captured by a piping system that routes the vapors to a Vapor Recovery Unit (VRU). This device routes the vapors to the inlet side of the flash gas compressor described above. A series of four enclosed combustors serve as back-up to the VRU to ensure control of emissions at times when the VRU is not available (e.g. routine maintenance or equipment failure) or, if the gas at the inlet to this device contains excessive concentrations of oxygen.

PROPOSED CHANGES

The following description of changes was taken from the permit application R13-3214A:

Based on measurements over the past several months, the maximum amount of condensate and produced water managed by this facility is now well below 15% of the permitted 1290 bbl/day and 950 bbl/day respectively. Due to this sharp reduction in liquids managed at this facility, the amount of vapor managed by the VRU has dropped proportionately. It is no longer cost-effective to recover the much smaller volume of vapors currently managed by the VRU. Triad Hunter is seeking to remove the VRU and have all vapors currently managed by this device routed to the existing combustors, rather than these devices serving only as a backup for when the VRU is not available due to breakdowns and/or maintenance. Additionally, as the amount of condensate and water being trucked has dropped to less than 15% of the permitted daily and annual volumes, Triad Hunter is also seeking to reduce the amount of allowable truck loading, thereby reducing VOC and fugitive dust emissions from those operations as well.

Clarified by e-mail dated January 9, 2017, the applicant, Triad Hunter, is also seeking to reduce condensate throughput limits 8,130 gallons per day (194 bbl) and 645,000 gallons per year from 54,200 gallons per day and 4,300,000 gallons per year and produced water limits of 6,300 gallons per day (150 bbl) and 454,000 gallons per year from 37,300 gallons per day/3,024,000 gallons per year. The also reduced truck trips and fugitive emissions.

SITE INSPECTION

The following site inspection is from the evaluation for permit 13-3214A prior to removal of the vapor recovery unit:

James Jarrett from DAQ's Compliance and Enforcement Section conducted a site inspection on October 1, 2014. Kevin Cunningham gave him a tour of the site.

Directions to the facility are as follows: From Middlebourne, travel on WV-18 north for ~0.7 miles. Turn left onto Sellers Road (Rt. 2/4) for 0.1 miles then turn right onto Pleasants Ridge

Fact Sheet R13 – 3214A
Triad Hunter, LLC
Stewart Winland

Road (Rt. 18/4). Travel 2.3 miles and make a left on Goldring Road (Rt. 10/1). Google Earth calls this road Allen Run Road. Travel 1.3 miles and make a right onto the site access road. Travel ~0.5 miles to the site. UTM Coordinates 505,185.95 m E & 4,373,341.60 m N.

Findings:

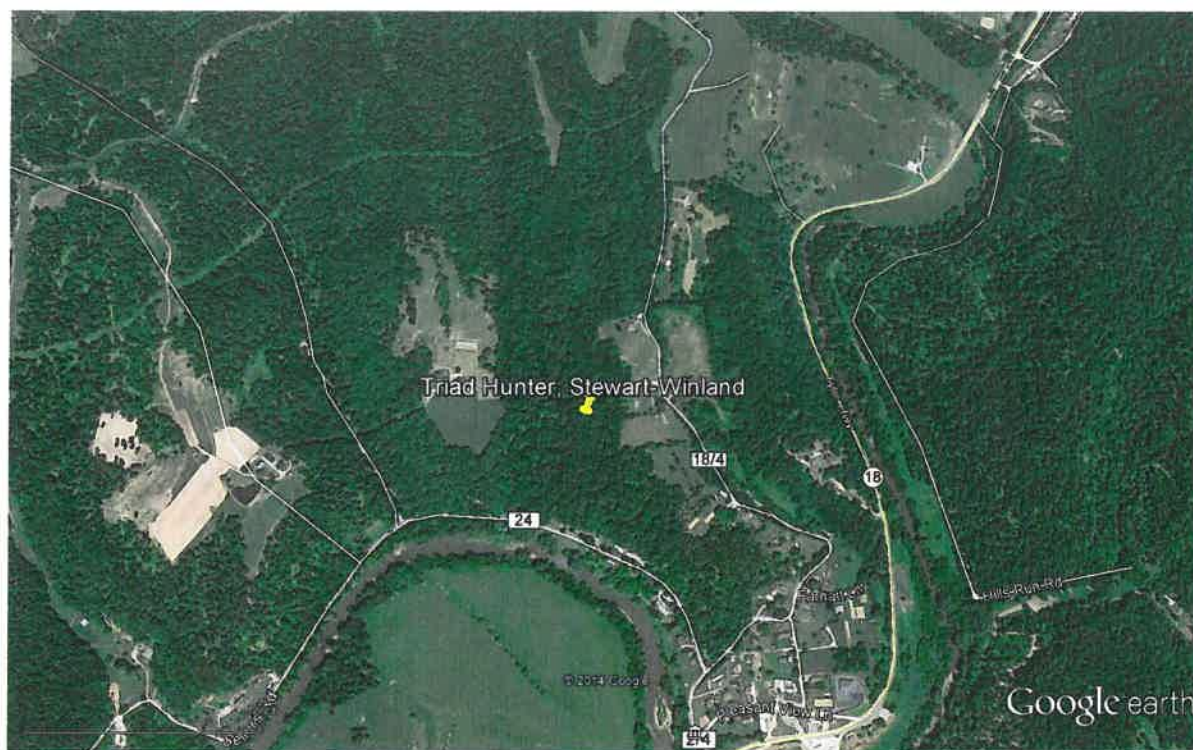
The closest residence is ~ 1,300 feet to the South from the well site.

The site commenced construction on August 6, 2014 but is not in operation. The Utica well is ready for production. The 3 Marcellus wells need flowback completed. The gas from the Utica well is expected to be dry and will not require compression. The gas from the Marcellus wells are expected to be wet and will require compression.

The site contained the following:

Description	Capacity / Info
Utica Natural Gas Well (dry gas)	Expected natural gas 80 million ft ³ /day @ 1,000 psig
Three (3) Marcellus Natural Gas Wells (wet gas)	Expected natural gas 17 million ft ³ /day @ 300 psig Expected condensate 300 bbl/day per well
Two (2) Utica GPUs (one will be removed later)	2.0 million BTU/hr each
Three (3) Marcellus GPUs	1.0 million BTU/hr each (per KC – not on nameplate)
TEG dehydration unit	Gas throughput 80 million ft ³ /day Reboiler 1.0 million BTU/hr 2 KIMRAY glycol pumps model 45020PV 450 gph each JATCO BTEX eliminator on dehy still vent (s/n 14215)
Utica well separator	300 psig to atmospheric tanks
Marcellus wells separator	40 psig to atmospheric tanks
NG fired flash gas compressor	Used for separators vapors. Returns vapors to Caterpillar compressor engine suction. Cummins Engine 84 HP @ 1800 RPM Model C5.9C s/n 46790174 Mfg date 8-2007 Miratech Catalyst (unable to read model)
Electric VRU	Variable drive. Used for storage tanks and vapor recovery tower. Returns vapors to suction of flash gas compressor
Vapor Recovery Tower	Used before storage tanks.
Four (4) vapor combustors	Used as backup control device if VRU goes down Comm Engineering Automatic pilot and flare gas throughput meter
Four (4) Condensate Storage Tanks	500 bbl each Thief hatches vent setting 12 or 16 ounces
Four (4) Produced Water Storage Tanks	500 bbl each Thief hatches vent setting 12 or 16 ounces
Fuel Gas Skid	Valerus Unit. Used to stabilize high BTU gas for the 2 gas fired compressor engines. Used pressure drop to condense liquids from the wet gas. Liquids are transferred to condensate storage system. The GPUs and dehy reboiler are fueled by wet gas.
Natural gas fired compressor engine	Caterpillar 1380 HP (G3516B) s/n JEF02539 Compressor 17 million ft ³ /day DCL Catalyst Model 2-DC64-16 s/n 251674

Fact Sheet R13 – 3214A
Triad Hunter, LLC
Stewart Winland



ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Existing facility wide emissions are as follows (based on Engineering Evaluation R13-3214A Application):

CO	NO _x	PM ₁₀ /PM _{2.5}	SO ₂	VOCs	HAPs
tpy	tpy	tpy	tpy	tpy	tpy
17.08	18.98	3.83	0.09	37.79	5.31

Emissions from the parts of the facility effected by this modification are as follows.

Existing vapor combustion units (VCU-1 through VCU-4) combined emissions :

Existing Pollutant	Source	Hourly (lb/hr)	Annual (ton/yr)
NO _x	AP-42	1.45	0.17
CO	AP-42	7.85	0.78
PM ₁₀ /PM _{2.5} ¹	AP-42	0.12	0.01
VOCs	AP-42	16.35	21.87
HAPs	AP-42	0.03	0.01

(1) Filterable + Condensable.

Existing vapor combustion units (VCU-1 through VCU-4) combined emissions receiving the vapors that were previously sent to the vapor recovery unit (vapor recovery unit removed):

Existing Pollutant	Source	Hourly (lb/hr)	Annual (ton/yr)
NO _x	AP-42	0.42	1.90
CO	AP-42	2.23	10.19
PM ₁₀ /PM _{2.5} ¹	AP-42	0.02	0.08
VOCs ⁽²⁾	AP-42	1.60	7.00
HAPs	AP-42	0.00	0.02

(1) Filterable + Condensable.

(2) Includes Formaldehyde

VCU-1 through VCU-4 combined emissions change:

Existing Pollutant	Source	Hourly (lb/hr)	Annual (ton/yr)
NO _x	AP-42	-1.03	1.73
CO	AP-42	-5.62	9.41
PM ₁₀ /PM _{2.5} ¹	AP-42	-0.10	0.07
VOCs ⁽²⁾	AP-42	-14.75	-14.87
HAPs	AP-42	-0.03	0.01

Existing Controlled Truck Loading

Existing Pollutant	Source	Hourly (lb/hr)	Annual (ton/yr)
VOCs ⁽²⁾	AP-42	0.43	0.21

Existing Truck Loading Reduced Throughput and Hauling

Existing Pollutant	Source	Hourly (lb/hr)	Annual (ton/yr)
VOCs ⁽²⁾	AP-42	4.85	0.42

Change in Truck Loading Emissions

Existing Pollutant	Source	Hourly (lb/hr)	Annual (ton/yr)
VOCs ⁽²⁾	AP-42	4.72	0.21

Existing Haul Road Emissions

Existing Pollutant	Source	Hourly (lb/hr)	Annual (ton/yr)
PM	AP-42	10.86	2.41

Existing Haul Road with Hauling Reduced

Existing Pollutant	Source	Hourly (lb/hr)	Annual (ton/yr)
PM	AP-42	10.86	0.38

Change in Haul Road Emissions

Existing Pollutant	Source	Hourly (lb/hr)	Annual (ton/yr)
PM	AP-42	0.00	-2.03

The estimated change in facility wide emissions are as follows:

Source	CO		NOx		PM ₁₀ /PM _{2.5}		VOCs		HAPs	
	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy	lb/hr	tpy
VCU-1 through VCU-4	-5.62	9.41	-1.03	1.73	-0.10	0.07	-14.75	-14.87	-0.03	0.01
Truck Loading	--	--	--	--	--	--	1.42	0.11	--	--
Haul Roads	--	--	--	--	0.00	-2.03	--	--	--	--
TOTAL	-5.62	9.41	-1.03	1.73	-0.10	-1.96	-13.33	-14.76	-0.03	0.01

The new facility wide emission estimates are as follows:

CO	NO _x	PM ₁₀ /PM _{2.5}	SO ₂	VOCs	HAPs
tpy	tpy	tpy	tpy	tpy	tpy
26.50	20.71	1.87	0.09	23.03	5.11

REGULATORY APPLICABILITY

The following state and federal regulations were reviewed for applicability for permit 13-3214. The proposed changes at this facility will not involve the installation of any new or additional equipment or modification to existing equipment that will trigger any changes in either federal or state regulatory programs.

State Regulations:

45CSR2 (Particulate Air Pollution from Combustion of Fuel in Indirect Heat Exchangers)

The purpose of 45CSR2 is to establish emission limitations for smoke and particulate matter which are discharged from fuel burning units. 45CSR2 states that any fuel burning unit that has a heat input under ten (10) million B.T.U.'s per hour is exempt from sections 4 (weight emission standard), 5 (control of fugitive particulate matter), 6 (registration), 8 (testing, monitoring, recordkeeping, reporting) and 9 (startups, shutdowns, malfunctions). However, failure to attain acceptable air quality in parts of some urban areas may require the mandatory control of these sources at a later date.

The individual heat input of the GPU Heaters (HTR-1 thru HTR-10) and the Dehydration Unit Reboiler (HTR-11) are below 10 MMBTU/hr. Therefore, these units are exempt from the aforementioned sections of 45CSR2.

The applicant is subject to the opacity requirements in 45CSR2, which is 10% opacity based on a six minute block average.

45CSR6 (To Prevent and Control Air Pollution from the Combustion of Refuse)

45CSR6 prohibits open burning, establishes emission limitations for particulate matter, and establishes opacity requirements. Sources subject to 45CSR6 include completion combustion devices, enclosed combustion devices, and flares.

The facility-wide requirements of the permit include the open burning limitations §§45-6-3.1 and 3.2.

All completion combustion devices, enclosed combustion devices, and flares are subject to the particulate matter weight emission standard set forth in §45-6-4.1; the opacity

requirements in §§45-6-4-3 and 4-4; the visible emission standard in §45-6-4.5; the odor standard in §45-6-4.6; and the testing standard in §§45-6-7.1 and 7.2.

Flares that are used to comply with emission standards of NSPS, Subpart OOOO are subject to design, operational, performance, recordkeeping and reporting requirements of the NSPS regulation that meet or exceed the requirements of 45CSR6.

The applicant has four (4) vapor combustor units that will be used as primary control devices of vapors from storage tanks and truck loading operations. The vapor combustors have negligible particulate matter emissions. Therefore, the facility's vapor combustor units should demonstrate compliance with this section. The facility will demonstrate compliance by maintaining records of the amount of natural gas consumed by the flare and the hours of operation. The facility will also monitor the flame of the flare and record any malfunctions that may cause no flame to be present during operation.

45CSR10 (To Prevent and Control Air Pollution from the Emissions of Sulfur Oxides)

The purpose of 45CSR10 is to establish emission limitations for sulfur dioxide which are discharged from fuel burning units. 45CSR10 states that any fuel burning unit that has a heat input under ten (10) million B.T.U.'s per hour is exempt from sections 3 (weight emission standard), 6 (registration), 7 (permits), and 8 (testing, monitoring, recordkeeping, reporting). However, failure to attain acceptable air quality in parts of some urban areas may require the mandatory control of these sources at a later date.

The individual heat input of the GPU Heater (HTR-1 thru HTR-10) and the Dehydration Unit Reboiler (HTR-11) are below 10 MMBTU/hr. Therefore, these units are exempt from the aforementioned sections of 45CSR10.

45CSR13 (Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation)

Potential emissions associated with the proposed project are not greater than the minor source modification permit thresholds of 6 pounds per hour (pph) and 10 tons per year (tpy) of any regulated air pollutant of 144 pounds per day (ppd) of any regulated air pollutant OR 2 pph OR 5 tpy of aggregated hazardous air pollutants OR 45 CSR27 toxic air pollutant OR subject to applicable substantive rule. The applicant has demonstrated compliance with 45CSR13 by submitting a complete permit application for a Class II administrative update because they are removing the vapor recovery unit.

Triad Hunter has published the required Class I legal advertisement notifying the public of their permit application, and paid the appropriate application fees. The Class I legal advertisement ran in the *Tyler Star News*, on December 14, 2017.

Fact Sheet R13 – 3214A
Triad Hunter, LLC
Stewart Winland

45CSR16 (Standards of Performance for New Stationary Sources Pursuant to 40 CFR Part 60)

45CSR16 applies to this source by reference of 40CFR60, Subparts JJJJ and OOOO. These requirements are discussed under that rule below.

45CSR22 (Air Quality Management Fee Program)

This facility will be required to maintain a valid Certificate to Operate on the premises.

45CSR34 (Emission Standards for Hazardous Air Pollutants)

45CSR34 applies to any applicant that is subject to the area source requirements of 40 CFR 63, Subpart ZZZZ or Subpart HH, described in more detail in the Federal Regulations section. WVDAQ has taken delegation of the area source requirements of these subparts. 45CSR34 applies to this applicant because they are subject to the applicable requirements of NESHAP, Subpart HH and ZZZZ.

Federal Regulations:

40CFR60, Subpart JJJJ (Standards of Performance for Stationary Spark Ignition Internal Combustion Engines)

This subpart governs emissions from new stationary spark ignition internal combustion engines (SI ICE) manufactured after July 1, 2007. Both natural gas compressor engines (CE-1 and CE-2) and the Flash Gas Compressor engine (CE-3) presented in this application will be SI ICE units manufactured after this date. Engines CE-1 and CE-2 were manufactured after January 1, 2010. Engine CE-3 has a manufactured date of August 1, 2007. Accordingly, this rule applies to those engines. The application states that all engines installed will be in compliance with the requirements of this rule.

The engine data sheets provided in the application state that the engines are not certified engines according to NSPS, Subpart JJJJ.

Compliance will be determined by compliance to permit requirements.

40CFR60 Subpart OOOO (Standards of Performance for Crude Oil and Natural Gas Production, Transmission and Distribution)

EPA published in the Federal Register new source performance standards (NSPS) and air toxics rules for the oil and gas sector on August 16, 2012. 40CFR60 Subpart OOOO establishes emission standards and compliance schedules for the control of volatile organic compounds (VOC) and sulfur dioxide (SO₂) emissions from affected facilities that commence construction, modification or reconstruction after August 23, 2011. The following affected sources which commence construction, modification or reconstruction after August 23, 2011 are subject to the applicable provisions of this subpart:

Fact Sheet R13 – 3214A
Triad Hunter, LLC
Stewart Winland

a. Each gas well affected facility, which is a single natural gas well.

The applicant has four (4) natural gas well affected facilities. The API numbers for the wells at this facility are: 47-9502128, 47-9502089, 47-9502088, and 47-9502087.

The gas wells at the Stewart Winland Pad are being drilled principally for the production of natural gas and were done so after August 23, 2011. Therefore, these wells would be considered affected facilities under this subpart. The compliance date for these hydraulically fractured wells is October 15, 2012. Triad Hunter is required under §60.5410 to submit an initial notification, initial annual report, maintain a log of records for each well completion, and maintain records of location and method of compliance. §60.5420 requires the applicant to demonstrate continuous compliance by submitting reports and maintaining records for each completion operation.

b. Each reciprocating compressor affected facility, which is a single reciprocating compressor located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment. For the purposes of this subpart, your reciprocating compressor is considered to have commenced construction on the date the compressor is installed (excluding relocation) at the facility. A reciprocating compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart.

There are reciprocating internal combustion engines included in the Stewart Winland application. The engines will be delivered after the effective date of this rule. However, §60.5365(c) states that a reciprocating compressor located at a well site, or an adjacent well site and servicing more than one well site, is not an affected facility under this subpart. Therefore, all requirements regarding reciprocating compressors under 40 CFR 60 Subpart OOOO would not apply.

c. Pneumatic Controllers

- Each pneumatic controller affected facility, which is a single continuous bleed natural gas-driven pneumatic controller operating at a natural gas bleed rate greater than 6 scfh which commenced construction after August 23, 2011, and is located between the wellhead and the point of custody transfer to the natural gas transmission and storage segment and not located at a natural gas processing plant.*
- Each pneumatic controller affected facility, which is a single continuous bleed natural gas-driven pneumatic controller which commenced construction after August 23, 2011, and is located at a natural gas processing plant.*

According to the regulatory section of the permit application, all pneumatic controllers to be installed at Stewart Winland Production Facility will have a bleed rate of less than 6 scfh.

- d. *Each storage vessel affected facility, which is a single storage vessel, located in the oil and natural gas production segment, natural gas processing segment or natural gas transmission and storage segment.*

40CFR60 Subpart OOOO defines a storage vessel as a unit that is constructed primarily of non-earthen materials (such as wood, concrete, steel, fiberglass, or plastic) which provides structural support and is designed to contain an accumulation of liquids or other materials. The following are not considered storage vessels:

- Vessels that are skid-mounted or permanently attached to something that is mobile (such as trucks, railcars, barges or ships), and are intended to be located at a site for less than 180 consecutive days. If the source does not keep or are not able to produce records, as required by §60.5420(c)(5)(iv), showing that the vessel has been located at a site for less than 180 consecutive days, the vessel described herein is considered to be a storage vessel since the original vessel was first located at the site.
- Process vessels such as surge control vessels, bottoms receivers or knockout vessels.
- Pressure vessels designed to operate in excess of 204.9 kilopascals and without emissions to the atmosphere.

This rule requires that the permittee determine the VOC emission rate for each storage vessel affected facility utilizing a generally accepted model or calculation methodology within 30 days of startup, and minimize emissions to the extent practicable during the 30 day period using good engineering practices. For each storage vessel affected facility that emits more than 6 tpy of VOC, the permittee must reduce VOC emissions by 95% or greater within 60 days of startup. The compliance date for applicable storage vessels is October 15, 2013.

The storage vessels at this facility were constructed after August 23, 2011. The facility is considered to have Group 1 Storage Vessels.

At the time of the application, the facility has determined the uncontrolled emissions from the storage tanks are greater than 6 tpy from each condensate vessel. The emissions from the storage vessels at the Stewart Winland facility will be routed to vapor combustion units with a 99.5% capture/control efficiency. The potential emissions that will be included in the permit will be less than 6 tpy of VOC. Therefore, Triad Hunter is not required by this section to further reduce VOC emissions by 95%, since this subpart takes into account federal enforceable controls.

Fact Sheet R13 – 3214A
Triad Hunter, LLC
Stewart Winland

40CFR63, Subpart HH (National Emission Standards for Hazardous Air Pollutants for Source Categories from Oil and Natural Gas Production Facilities)

The proposed equipment for the Stewart Winland Production Facility does contain a TEG dehydration operation; therefore, this rule applies. However, as set forth in 40 CFR 63.764(d)(2), since the actual average benzene emissions will be less than 1 tpy, the facility is, for all practical purposes, exempt from the rule. The facility must maintain records of this determination as required in 40 CFR 63.774(d)(1). A copy of the GRI-GLYCALC modeling input and results demonstrating compliance with the 1 tpy requirements is provided in the emissions calculations provided in the application.

The applicant has demonstrated eligibility for the exemption on the basis of the RSV-1 benzene PTE emissions.

40CFR63, Subpart ZZZZ (National Emission Standards for Hazardous Air Pollutants for Source Categories from Stationary Reciprocating Internal Combustion Engines – Area Source)

This subpart governs emissions from a stationary reciprocating internal combustion engine (RICE) located at both major and area sources of HAPs. The facility will be an area source of HAPs and is subject to this rule. All of the engines that will be installed under this application will be manufactured after July 1, 2010.

In accordance with 40 CFR 63.6590(a)(2)(iii), none of the engines at the planned Stewart Winland Production facility will be considered existing stationary RICE. All will be considered “new” engines. Therefore, the engines will meet the requirements of this rule by meeting the requirements of NSPS, Subpart JJJJ as described above.

The applicant will be demonstrating compliance with Subpart ZZZZ by demonstrating compliance with Subpart JJJJ for new engines.

Non-applicability determinations

45CSR14 (Permits for Construction and Major Modification of Major Stationary Sources for the Prevention of Significant Deterioration of Air Quality)

“Major stationary source” is any stationary source (not including the named source type in 2.43.a) which emits or has the potential to emit, two hundred fifty (250) tons per year or more of any regulated pollutant. For this facility, the fugitives are not included in determining “major stationary source” status.

With the additional level of capture/control of the VCU’s allowed by the R13-3214 permit with appropriate federally enforceable limitations and requirements, the applicant has VOC potential emissions below the major stationary source threshold for PSD when the permit is issued.

Fact Sheet R13 – 3214A
Triad Hunter, LLC
Stewart Winland

45CSR30 (Requirements for Operating Permits)

“Major source” means any stationary source (or any group of stationary sources that are located on one or more contiguous or adjacent properties, and are under common control of the same person (or persons under common control)) belonging to a single major industrial grouping and that is described in subdivisions 2.26.a, 2.26.b, or 2.26.c. For the purpose of defining “major source,” a stationary source or group of stationary sources shall be considered part of a single industrial grouping if all of the pollutant emitting activities at such source or group of sources on contiguous or adjacent properties belong to same Major Group (i.e., all have the same two-digit code) as described in the Standard Industrial Classification Manual, 1987,

except that a research and development facility may be treated as a separate source from other stationary sources that are part of the same industrial grouping, are located on contiguous or adjacent property, and are under common control.

(2.26.a) Any stationary source that emits or has the potential to emit, in the aggregate, ten (10) tons per year (tpy) or more of any hazardous air pollutant, or twenty-five (25) tpy or more of any combination of hazardous air pollutants.

(2.26.b) Directly emits or has the potential to emit, one hundred (100) tpy or more of any air pollutant subject to regulation. The fugitive emissions for this stationary source are not included in the determination of major source status because it does not belong to one of the named source categories.

With the additional level of capture/control of the VRU system allowed by the R13-3214 permit with appropriate federally enforceable limitations and requirements, the applicant will have VOC potential emissions below the major source threshold for Title V when the permit is issued.

NSPS, Subpart Kb (Volatile Organic Liquid Storage Tanks constructed or modified after 1984)

The capacity of these tanks (21,000 gallons or 500 BBL) is above the threshold for this regulation (19,800 gallons or 75 cubic meters). However, in accordance with 40 CFR60.110b(d)(4), “Vessels with a design capacity less than or equal to 1,589.874 m³ (420,000 gallons) used for petroleum or condensate stored, processed, or treated prior to custody transfer” are excluded from regulation. Hence, the rule does not apply to the four stabilized condensate tanks.

TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS

Non-criteria regulated hazardous air pollutants such as benzene, toluene, and formaldehyde may be emitted when natural gas is combusted in reciprocating engines, combusted in the fuel burning units, or combusted in one of the combustion type air pollution control devices.

Listed below is information regarding each of the hazardous air pollutants.

Fact Sheet R13 – 3214A
Triad Hunter, LLC
Stewart Winland

BTEX:

BTEX is the term used for benzene, toluene, ethylbenzene, and xylene. Each of these possible hazardous air pollutants are identified in this section.

Benzene:

Benzene is found in the air from emissions from burning coal and oil, gasoline service stations, and motor vehicle exhaust. Acute (short-term) inhalation exposure of humans to benzene may cause drowsiness, dizziness, headaches, as well as eye, skin, and respiratory tract irritation, and, at high levels, unconsciousness. Chronic (long-term) inhalation exposure has caused various disorders in the blood, including reduced numbers of red blood cells and aplastic anemia, in occupational settings. Reproductive effects have been reported for women exposed by inhalation to high levels, and adverse effects on the developing fetus have been observed in animal tests. Increased incidence of leukemia (cancer of the tissues that form white blood cells) have been observed in humans occupationally exposed to benzene. EPA has classified benzene as a Group A, human carcinogen.

Ethyl Benzene:

Ethyl benzene is mainly used in the manufacturing of styrene. Acute (short-term) exposure to ethyl benzene in humans results in respiratory effects, such as throat irritation and chest constriction, irritation of the eyes, and neurological effects, such as dizziness. Chronic (long-term) exposure to ethyl benzene by inhalation in humans has shown conflicting results regarding its effects on the blood. Animal studies have reported effects on the blood, liver, and kidneys from chronic inhalation exposure to ethyl benzene. Limited information is available on the carcinogenic effects of ethyl benzene in humans. In a study by the National Toxicology Program (NTP), exposure to ethyl benzene by inhalation resulted in an increased incidence of kidney and testicular tumors in rats, and lung and liver tumors in mice. EPA has classified ethyl benzene as a Group D, not classifiable as to human carcinogenicity.

Formaldehyde:

Formaldehyde is used mainly to produce resins used in particle board products and as an intermediate in the synthesis of other chemicals. Exposure to formaldehyde may occur by breathing contaminated indoor air, tobacco smoke, or ambient urban air. Acute (short-term) and chronic (long-term) inhalation exposure to formaldehyde in humans can result in respiratory symptoms, and eye, nose, and throat irritation. Limited human studies have reported an association between formaldehyde exposure and lung and nasopharyngeal cancer. Animal inhalation studies have reported an increased incidence of nasal squamous cell cancer. EPA considers formaldehyde a probable human carcinogen (Group B1).

n-Hexane:

n-Hexane is a solvent that has many uses in the chemical and food industries, either in pure form or as a component of commercial hexane. The latter is a mixture that contains approximately 52% n-hexane; the balance is made up of structural analogs and related chemicals such as methylpentane and methylcyclopentane. Highly purified n-hexane is used as a reagent for chemical or chromatographic separations. Other grades of n-hexane are used as solvents for extracting edible fats and oils in the food industry and as a cleaning agent in the textile, furniture,

Fact Sheet R13 – 3214A
Triad Hunter, LLC
Stewart Winland

and printing manufacturing industries. Hexane is the solvent base for many commercial products, such as glues, cements, paint thinners, and degreasers. n-Hexane is a minor constituent of crude oil and natural gas and occurs in different petroleum distillates. No data are available regarding the potential toxicity of n-hexane in humans orally exposed to n-hexane. However, as might be expected for a chemical with such wide application, the potential exists for persons to be environmentally and/or occupationally exposed to n-hexane via other routes of exposure.

Toluene:

The acute toxicity of toluene is low. Toluene may cause eye, skin, and respiratory tract irritation. Short-term exposure to high concentrations of toluene (e.g., 600 ppm) may produce fatigue, dizziness, headaches, loss of coordination, nausea, and stupor; 10,000 ppm may cause death from respiratory failure. Ingestion of toluene may cause nausea and vomiting and central nervous system depression. Contact of liquid toluene with the eyes causes temporary irritation. Toluene is a skin irritant and may cause redness and pain when trapped beneath clothing or shoes; prolonged or repeated contact with toluene may result in dry and cracked skin. Because of its odor and irritant effects, toluene is regarded as having good warning properties. The chronic effects of exposure to toluene are much less severe than those of benzene. No carcinogenic effects were reported in animal studies. Equivocal results were obtained in studies to determine developmental effects in animals. Toluene was not observed to be mutagenic in standard studies.

Xylene:

Commercial or mixed xylene usually contains about 40-65% *m*-xylene and up to 20% each of *o*-xylene and *p*-xylene and ethyl benzene. Xylenes are released into the atmosphere as fugitive emissions from industrial sources, from auto exhaust, and through volatilization from their use as solvents. Acute (short-term) inhalation exposure to mixed xylenes in humans results in irritation of the eyes, nose, and throat, gastrointestinal effects, eye irritation, and neurological effects. Chronic (long-term) inhalation exposure of humans to mixed xylenes results primarily in central nervous system (CNS) effects, such as headache, dizziness, fatigue, tremors, and incoordination; respiratory, cardiovascular, and kidney effects have also been reported. EPA has classified mixed xylenes as a Group D, not classifiable as to human carcinogenicity. Mixed xylenes are used in the production of ethylbenzene, as solvents in products such as paints and coatings, and are blended into gasoline.

AIR QUALITY IMPACT ANALYSIS

Modeling was not required of this source due to the fact that the facility is not subject to 45CSR14 (Permits for Construction and Major Modification of Major Stationary Sources of Air Pollutants) as seen in the table listed in the Regulatory Discussion Section.

MONITORING OF OPERATIONS

Natural Gas Wells

- Per NSPS, Subpart OOOO

Pneumatic Controllers

- Per NSPS, Subpart OOOO

Fact Sheet R13 – 3214A
Triad Hunter, LLC
Stewart Winland

Engines

- Catalytic Oxidizer Control Devices regularly inspected to maintain proper operation of the A/F ratio controller or automatic feedback controller and follow catalyst manufacturers maintenance procedures
- Records for hours of operation, fuel consumption, maintenance, catalyst maintenance, engine maintenance plan
- Per NSPS, Subpart JJJJ

GPU Heaters and Glycol Dehydration Unit Reboiler

- Opacity monitoring upon request
- Records of natural gas consumption

Storage Tanks

- Daily inspection of condensate tank seals (per application) & records
- Closed vent system monitoring (initial & continuous) & records
- Throughput records (monthly & annual)
- Records of affected facility determination after start-up
- Reporting if condensate tower plans to be removed from service

VRU System

- Throughput to the VRU and the VCUs monitored on a monthly basis & records
- VRU monitored per manufacturer's recommendations
- Closed vent system monitoring (initial & continuous) & records
- Continuous monitoring/recordkeeping of the pressure in the tanks to demonstrate that the gas is not escaping through pressure relief valves & records
- Continuous monitoring of VRU run status
- Records of VRU design, downtime
- Maintenance records

Vapor Combustor Units

- VCU design records
- Monitor presence of pilot flame with flame ionization detector & records when absent
- VE monitoring & records
- Maintenance records

Tank Truck Loading

- Records of annual MACT leak test certification for every condensate TT loaded
- Throughput records (monthly, annual)

Glycol Dehydration Unit

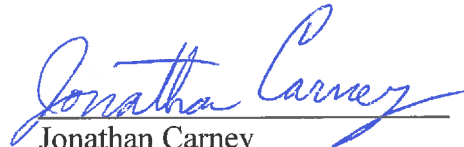
- Monitor throughput of wet natural gas monthly & records
- Wet gas sample upon request
- Per NESHAP, Subpart HH for units exempt to § 63.764(d)


Blowdowns

- Monitor and record the number of blowdown events.

RECOMMENDATION TO DIRECTOR

It is recommended that permit R13-3214A be granted to the Triad Hunter, LLC, Stewart Winland Production Facility (095-00042) located in Middlebourne, Tyler County, WV. Based on the information provided in the application, including all supplemental information received, the applicant will meet all state and federal regulations by demonstrating compliance to the permit requirements.


Jonathan Carney
Permit Writer


DATE

Fact Sheet R13 – 3214A
Triad Hunter, LLC
Stewart Winland